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Montana Journal

Association for Health, Physical Education, Recreation and Dance

Spring/Summer 1993

Footbag — The World's Fastest Growing Foot Sport

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MONTANA JOURNAL
OF HEALTH,
PHYSICAL EDUCATION,
RECREATION AND
DANCE

MAHPERD

Spring/Summer 1993

Montana Association for Health, Physical Education, Recreation and Dance

CONTENTS

MAHPERD Business 3

MAHPERD Articles

Footbag — The World's Fastest Growing Foot Sport 4
Daniel G. Graetzer and A.W. Miller
Early Cardiac Care — The Final Risk Factor 8
Raymond D. Bahr and Robert G. Zeigler
A Comparison of Three Methods of Estimating Body Composition in Adolescent Males 11
Debra Sension-Hall and Daniel G. Graetzer
Ingredients for a Drug Abuse Prevention Program 18
Colette M. Evans
Plyometric Training for High School Athletes 21
Jason T. McKinney, Gary Johnson and Daniel G. Graetzer

MAHPERD News/Dates/Announcements 28

Photo credit: Photo #1 involves doubles footbag net action at the annual World Footbag Association championships in Golden, Colorado. Photo #2 shows a clipper kick during footbag freestyle competition. Both photos are courtesy of the World Footbag Association

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MAHPERD Business

From the President Elect...

The fall convention in Great Falls, is seven months away (October 21 and 22), but it will be here before we know it. A lot of the planning will take place during the Spring Board meeting on May 22 in Great Falls. I hope that you will be able to join us as we start planning. Your expertise and ideas will be greatly appreciated.

The 9:00 a.m. meeting will start at the G.F.H.S. Fieldhouse, where the conference will be held. We will look over the facility, answer your questions, and then proceed to Paris Gibson Middle School, a few blocks away and continue the meeting.

Ten rooms at the Townehouse Motel, 1411 10th Avenue South (1-800-442-4667) have been set aside for the Spring Board meeting. You must call and make reservations before May 7, if you are interested in staying there. Rates are $30 for state employees; $48/$52 for MAHPERD members, plus tax. You must identify yourself and have proof of identification.

I hope everyone will be able to attend on May 22 so that we can get a good start on this convention. My committee in Great Falls has already met and we have several new ideas to suggest, and are anxious for your opinions and suggestions. If you will not be able to attend, please let me know.

Shirley Weaver

Tentative Conference Schedule

Thursday, October 21

8:00 a.m. - 4 :00 p.m.	Registration G.F.H.S. Fieldhouse
8:00 a.m. - 9:00 a.m.	Continental Breakfast
8:30 a.m. - 9:00 a.m.	Welcome by Jim Grant, Physical Education Supervisor and Athletic Director, Great Falls School District; convention announcements and changes
9:00 - 9:50 a.m.	First Session
10:00 - 10:50 a.m.	Second Session
11:00 - 11:50 a.m.	Third Session
12:00 - 1:30 p.m.	Lunch
1:30 - 2:20 p.m.	Fourth Session
2:30 - 3:20 p.m.	Fifth Session
3:30 - 4:20 p.m.	Sixth Session
6:00 p.m.	Social, Buffet, Awards, Games and Dancing at the Black Eagle Community Center

Friday, October 22

8:00 - 9:00 a.m.	Seventh Session
9:00 - 10:30 a.m.	Keynote Speaker, Changing of the Guard
10:30 - 11:30 a.m.	Eight Session

MAHPERD Board Meeting and Lunch 12:00 noon

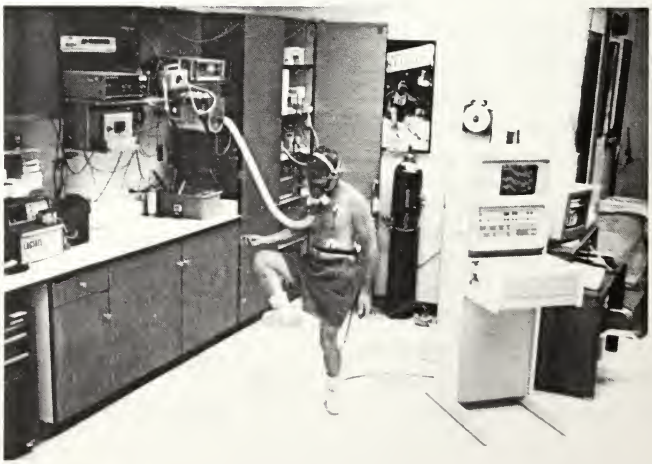
MAHPERD Articles

FOOTBAG — THE WORLD'S FASTEST GROWING FOOT SPORT

Daniel G. Graetzer and A.W. Miller
The University of Montana
Department of Health & Human Performance

Footbag — the activity you thought was an offshoot of the 1960's hippie generation could turn out to be the fast-paced, challenging, and motor-based activity for which teachers are always looking. It may even turn out to be one of the most challenging and enjoyable physical/mental workouts your students will ever experience. Footbag has found its way from school yards and parks into scholastic physical education curricula and even international sports television coverage. The goal of footbag is poetically simple: to keep a small beanbag aloft using only your feet and knees. In recent studies (Chen, Graetzer, & Johnson, 1990; Chen, Graetzer, Johnson, & Luetkemeier, 1990), footbag was shown to enhance balance, flexibility, reflexes and timing, concentration and vision skills, foot speed, agility, cardiovascular endurance, and strengthening of the muscles in the upper and lower leg, abdomen, and lower back. Oxygen consumption and heart rates taken during all official footbag events (except footbag golf) exceeded exercise intensity guidelines established by the American College of Sports Medicine (Graetzer & Chen, 1991a; Graetzer & Chen, 1990).

Several teachers and coaches have discovered footbag to be a great conditioning tool for other sports such as soccer, tennis, and handball (Graetzer & Chen, 1991b). Any activity which requires fine-tuned footwork and eye-body coordination and stresses both the aerobic and anaerobic energy systems can benefit by footbag's cross-training effects. Warming up with a footbag is also an excellent way to loosen up stiff joints and sore muscles before any



athletic event. Some physical therapists have recommended footbag kicking for knee and ankle rehabilitation.

Footbaggers doing their thing waiting for school buses are demonstrating two of the sport's greatest benefits: footbag is entirely portable and can be played indoors or out. Footbags are golf-ball sized, weigh about one ounce, and easily fit into a student's backpack, briefcase or pocket. In this era of high-priced training devices, a price tag of about seven dollars is another attractive plus.

Elementary and secondary teachers are starting to introduce footbag into their curriculum with daily and weekly units as a supplement to their body-eye, foot-eye coordination activities. Footbag has a direct transfer to skills prevalent in sports such as soccer by developing footwork, balance, body placement, and foot dexterity. It may also be the perfect indoor activity in a crowded gym where space is a premium, but activity and physical skill development are necessary. Time on task for students is very high both when the activity is conducted with oneself or a partner. Most students enjoy footbag because of its fast-paced mode, its challenge, its capability of transfer, and most of all because it is a fun, novel game.

The Process

Getting started with a footbag involves hand-dropping the footbag, performing a kick with the inside of your foot, and catching it each time you pop it up. Pay special attention to flattening the side of your foot as horizontally as possible. Like a volley in tennis, you are meeting the footbag and giving it a small punch into the air — not swinging (or kicking) through it. Contact the footbag at about knee level and curl your toes to create a flatter surface along your instep. After you gain "faith in your feet" and the inside kick is mastered, you can move on to the following: outside kicks (when the footbag falls to the outside of either shoulder, rotate your ankle outward and make contact with the outside of your foot), back kicks (contact the footbag with the outside of your foot when it goes back over your head), knee kicks, toe kicks, fliers (any basic kick performed with either foot in the air), and clippers (the kicking foot is crossed under the opposite foot).

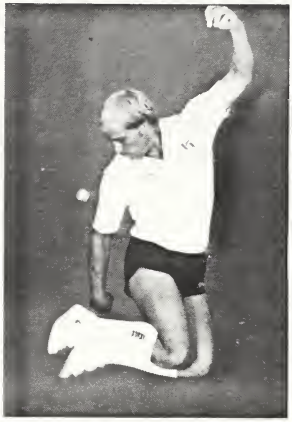
In spite of its loose and freestyle attitude, footbag has grown into a seriously competitive sport with an internationally recognized governing body, the World Footbag Association. The annual World Footbag Association Championships are held every year in late July at the Colorado School of Mines Campus in Golden, Colorado. Enjoying previous coverage by CBS and ESPN Sports, this "world series" of footbag provides the most celebrated footbag action on the planet. Participants compete in intermediate or open categories which are further organized into amateur and professional divisions. Professional players pay higher entry fees but can win prize money which has totaled over $20,000 in recent years. Footbag competitions are divided into the following categories:

Singles Footbag Consecutive

Footbag consecutive involves intercepting a footbag in flight and keeping it airborne using only the feet and knees. The total number of kicks is recorded with participants averaging between 80 and 110 kicks per minute. Ted Martin holds the men's Guinness Book World Record with 48,825 consecutive kicks in 8 hours, 11 minutes, and 25 seconds. The current women's record is 15,458 kicks in 2 hours, 35 minutes, and 13 seconds by Fancine Beaudry.

Doubles Footbag Consecutive

Doubles footbag consecutive involves keeping a footbag aloft between teammates. A rally of 64,792 consecutive kicks in 10 hours, 19 minutes, and 23 seconds is the current men's world record while 21,025 kicks in 3 hours, 39 minutes, and 43 seconds is the current women's record.



Singles Timed Footbag Consecutive

Accumulating the most kicks possible in 5 minutes is the goal during this speed consecutive event. Players lose 10 points or 10 kicks for each footbag body contact above the waistline and every drop to the ground. Players lose 3 points or 3 kicks for not alternating feet or knees during the rally. Considered the most demanding footbag discipline, the best of 2 rallies is used with a 10 minute rest period between attempts. The men's world record is 912 kicks in 5 minutes (182.4 kicks per minute or over 3 kicks per second after penalties) while the current women's record is 705 kicks.

Double Timed One Pass Footbag Consecutive

Teammates kick the footbag to each other while remaining behind lines 10 feet apart. A team loses 5 points (5 kicks) for stepping over the line with one foot. Stepping over the line with both feet, failing to return footbag to partner with one kick, any upper body contact or footbag contact with the ground ends the rally. Teams have 3 attempts to accumulate their best team score, with 10 minutes rest between rallies. A rally of 292 kicks is the current men's world record whereas 242 kicks is the women's record.

Footbag Freestyle

Footbag freestyle is a rhythmic footbag-kicking exercise performed to music which lets competitors display creativity, personality, and intricate footwork. Freestyle is scored similar to a floor routine in gymnastics with a complex degree-of-difficulty scoring system for tricks. Singles routines are 2 minutes in length while doubles and triples routines are 4 minutes.

Footbag Net

Footbag net incorporates basic kicks and fancy footwork with volleyball's scoring rules and tennis' playing rules. Footbag net is played on a doubles badminton court (44' by 20') with four equal serving quadrants and a 5'-high net across the center. Two kicks per side are allowed in singles. Doubles and mixed doubles footbag net allow 3 kicks per team per side with no single player allowed 2 consecutive kicks. Upper body contact is not permitted in either singles or doubles. Control, power, and the ability to use both feet are essential in order to cover the entire court.

Footbag Dash

Recognized for the first time in 1992 as an official event, footbag dash combines sure footed consecutive skills with a 100-meter race against the clock. The competitors begin behind a start-finish line, advanced to a 50-meter line, and then return. Doubles dash competitions follow the same

format and rules as singles by requiring both partners to cross the 50-minute line before returning to the start/finish line. Upper body contact, touches, crossing a centerline separating partners, or taking more than 3 consecutive kicks before a pass constitute fouls. At the time of infraction, as determined by an official, both players are required to return to the place of the intended receiver's partner's last kick before continuing.

Footbag golf

Footbag golf, similar to regular or frisbee disc golf, begins with a tee-off, requires players to kick through and around various hazards, and ends with a putt into a footbag golf hole. The technically difficult 18-hole par-72 course used for the World Championships is complete with trees, bunkers, and doglegs which require players to use high and low kicks on both sides of their bodies. Footbag golf is played in 3 elimination rounds and generally attracts the largest field of participants of any event.

Teachers and coaches looking for an exciting, physically and mentally challenging addition to a physical education curriculum should consider this fast paced sport. Footbag instruction can remain informal or adhere directly to one of the established event categories. Based on the lesson objective, students can quickly gain motor skill coordination, aerobic and anaerobic conditioning, and valuable transfer skills. Competitive footbag action is catching on overseas as fast as it is catching on in America. The Japanese Footbag Association has recently been formed with its major focus targeted toward interscholastic competition within the Japanese school system. Hacky-sack footbags by Whamm-O are currently being distributed in 15 countries with over 20 million sold. A glow-in-the-dark model is even being sold for night-time action. Although footbag is still in its infancy, the "world's fastest growing foot sport" should continue to develop into one of the world's most challenging, inexpensive, and fun exercise activities.

Contact the World Footbag Association for footbags and accessories, instructional and conditioning guidelines, and the quarterly publication of *Footbag World Magazine*. Contact: Bruce Guettich, The World Footbag Association, 1317 Washington Avenue, Suite 7, Golden, Colorado 80401, Phone: 303-278-9797.

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EARLY CARDIAC CARE — THE FINAL RISK FACTOR

Raymond D. Bahr and Robert G. Zeigler

Editor's Note: Dr. Bahr is the Medical Director of the Paul Dudley White Coronary Care System of Saint Agnes Hospital, Baltimore, Maryland. Dr. Robert Zeigler is the Executive Director the Maryland Association for Health, Physical Education, Recreation and Dance, and the Journal Editor for the Maryland AHPERD.

Early Cardiac Care can simply be identified as the first awareness alert of an impending cardiac disorder. The American Heart Association teaches about *emergency cardiac care* when it describes symptoms that lead to cardiac arrest and severe heart damage. However, it is extremely important that his knowledge be highlighted and magnified many items in order to generate an awareness program equal to the same intensity that is seen with cardiopulmonary resuscitation. Thus, early cardiac care applies to patients who manifest a milder type of chest and body discomfort before later cardiac care needs to take place, namely, CPR or thrombolytic therapy for occlusive coronary disease.

Why is it so important to separate *early* cardiac care from the thrombolytic therapy? Perhaps the most important reason is to allow us to more effectively expose the dynamics that take place when the heart attack begins. This approach allows us to reach the learning curve necessary for behavior modification and provides us with a better game plan on how to specifically treat *early* cardiac symptoms.

The Early Cardiac Care Program is a strategy being developed to combat the heart attack problem in the United States. Heart disease is the number one cause of death in this country and has been since the turn of the century. Each year a half million American lose their lives from this disease and its related complications. This is an unfortunate statistic because it need not be. Much of present day therapy, even though exciting, is not doing an adequate job. The miracle clot-dissolving drugs (classified as thrombolytic therapy) is reaching only 25% of heart attack patients in the United States, and most importantly, only 10% of such patients receive it within the golden first hour when maximum benefits can occur. The early cardiac care program promotes the premise that a strong effort must be made to get patients not the hospital at early stages of their illness. The present day approach can result in the possibility of waiting until total occlusion of the coronary vessels occur before rushing the patient to the hospital for emergency treatment.

There are probably many reasons why patients do not perceive early symptoms as serious enough to seek help, such as:

1. The patient may perceive this as "not pain" and since it is not real pain and the symptoms are only mild, it is easily put on the back burner. The patient may even be upset if he is made to feel that the needs to have mild symptoms checked out.
2. Patients may try to work through their problem and tough it out. This comes from childhood experiences in which parents program children to handle their problems independently. To counter this, report needs to take place if we are ever to make inroads on this number one health problem.
3. The emergency rooms are perceived as areas that are only for very sick patients.
4. The paramedic 911 response is perceived as sirens and ambulances and an embarrassing situation with neighbors trying to see what is going on.

5. Potential first responder at the scene are often and easily swayed by rationalization of the symptoms by the patient. It is an active good samaritan process to have people act as *early cardiac caregivers.*
6. Patients may not come in because they are not aware of the true importance of these symptoms. To overcome this, an awareness program is needed with knowledge about what actually is taking place and what will take place within a short period of time should intervention not be available.
7. Lack of appreciation of the heart as a pump for its marvelous role in the pursuit of full activity. The cardiac engine should be properly maintained and cared for, not neglected or abused.
8. Patients just simply wait it out, hoping that the symptoms will go away. But *time is like a river without banks*, it easily gets away from you and that short period of time amounts to hours allowing for full damage to take place.

Within the prescribed college course, half the time is spent with behavior dynamics in which the participants put themselves in the role of the patient, the first responder and other bystanders. It is important here to show that common sense should prevail and appropriate information be utilized so that these situations can be properly addressed.

Heart attack deaths may not be due to heart disease itself, but more due to a new disease, a disease that we can call *preoccupation* (too busy to check symptoms out). If so, treatment may not be a new genetically engineered drug but a method to reprogram the public so as to act when it counts. The concept of chest pain as well as chest discomfort needs to be promoted as a true risk factor, also, the fact that it is probably the *final risk factor* unless we undertake the effort to broadcast the potential of treating prodromal symptoms as a form of early cardiac care. To date we have failed.

Individual hospitals themselves do not seem to have the wherewithal to put together a uniform game plan to take advantage of today's early cardiac care. What is needed more than anything else is a *dynamic National movement* that will behave like chemical reaction and once started, be driven to widespread community preparation. There is nothing more powerful than an "idea whose time has come." The clue for this approach comes from case histories coming out of coronary Care Units. Daily bedside rounds in CCU's tell us that heart attacks do not have to kill, heart attacks can be acted upon with timely intervention, and that most benefits occur at the prodromal stage. What we see today is just the opposite, i.e., involvement only when crashing. In fact, one of the nurses recently asked a patient who came in early within the first hour, "What possessed you to do such a thing?", giving one the idea that the person who does arrive early is doing something wrong because this is not the norm. All this adds up to a need for an aggressive effort to reprogram society differently if we are ever to make inroads with this number one killer of the adult population in the United States.

The Saint Agnes Hospital Early Cardiac Care program is a program based on community experience over 20 years that attempts to show that patients with heart attacks have early warning symptoms that go unrecognized because they present as a milder form of chest discomfort and patients are thus programmed to put them on the back burner in the face of busy day life activities.

The purpose of the Saint Agnes Hospital program is to aggressively educate the public and change this behavior so that someone in the patient's midst becomes an Early Cardiac Caregiver and takes him/her into a user friendly hospital emergency room. These Chest Pain Centers are rapidly growing in the United States. There are

presently 183 Chest Pain Centers in 41 states. This exponential growth has taken place within the last two years and is expected to grow even more so within the foreseeable future. Community hospitals are very much interested in developing an outreach educational program in conjunction with setting up a Chest Pain Emergency Center.

In setting up the program, Saint Agnes Hospital worked closely with Catonsville Community College and Howard Community College in an effort to train instructors for high school students. As a result of this, a national satellite video program was presented to community colleges in the United States (October 1991) and copies of this three hour video program are available to show how this educational message can be taught.

The message of Early Cardiac Care is a simple message that needs to be widely applied. The ultimate goal is to penetrate communities and families within the United States in an effort to change behavior (reprogramming) so as to take advantage of early warning symptoms of a heart attack. The educational system becomes very important because we can program middle school students to have the proper message right from the very start. Colleges become important as a place to train instructors for high school programs. Recently a syllabus was written by teachers in Howard County, Maryland, and the course in Early Cardiac Care was taught to every student at the middle school level. Within a short period of time, it is hoped that his will spread throughout the other counties, making Maryland the first state to be programmed entirely. The involvement of additional colleges and universities would ultimately enhance the training of instructors needed to further the growth of this program.

Heart attack is the number one killer of the adult population in the United States, but it need not continue like this. To do so, it is important to get out the message that heart attacks have beginnings and *intervention amounts to prevention.* Perhaps the best way of getting this message out is through the educational system and by training instructors at the college level, and teaching it at the high school and middle school levels. This will, in turn, involve families and this penetration will promote action to be taken when heart attacks are beginning and will link up with the Early Cardiac Care movement being seen at community hospitals that are establishing chest pain centers in their emergency rooms. Thus, the strategy of Early Cardiac Care involving the community, the colleges, educational systems, and community hospitals, hopefully, will one day be the driving force to substantially reduce, if not eliminate, heart disease.

The Early Cardiac Care Program is designed to educate the public on the importance of the early state of the heart attack and that this can be detected with proper and adequate knowledge. There may be many problems interfering with this early type of response, but action at this stage and backing it up with a user friendly check out system in the hospital would, if widely applied at the 6700 hospitals in the United States, position us in such a way to eliminate heart disease in our lifetimes.

Colleges that are interested in starting a program can write for the community college video program on how to set up a program as well as the early symptom recognition video kit which includes the syllabus presently being taught in Howard County, Maryland. Such materials, as well as services, are available free of charge to interested colleges and educational systems.

Write to: Raymond D. Bahr, M.D., F.A.C.P.The Paul Dudley White Coronary Care System, Saint Agnes Hospital, 900 Caton Avenue, Baltimore, MD 21229

A COMPARISON OF THREE METHODS OF ESTIMATING BODY COMPOSITION IN ADOLESCENT MALES

Debra Sension-Hall and Daniel G. Graetzer
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The University of Montana

Introduction

There is growing concern about the fitness levels of today's youth and the health implications of maintaining a sedentary lifestyle as this population reaches adulthood (Ross & Bilgert, 1985). It is well established that many of the degenerative diseases experienced by adults today have their roots in poor health practices developed during childhood. The National Youth and Fitness Study (Ross & Pate, 1987) revealed that body fat levels in adolescents have risen dramatically in the last 20 years. The number of children classified as being clinically obese has also increased, this trend apparently due to a combination of declining activity levels and poor nutrition.

Body composition is a key determinant of health status and physical fitness level. Excesses in fat weight have been linked to kidney malfunction and low back pain (McArdle, Katch & Katch, 1991). Body composition analysis is helping to prevent these disorders by allowing specialists to recommend desirable body fat levels and precisely monitor the progress of persons trying to lose fat weight. Body fat assessment has also assisted in treatment of these diseases by allowing physicians to give patients more accurate medication doses than they could by just looking at overall body weight.

An appraisal of the body's percentage of fat and fat-free weight also provides an important basis for formulating a training program and in setting short- and long-term goals for recreational athletes. In competitive athletes, overfatness decreases running speed, jumping ability, and body heat dissipation and endurance capacity by restricting how quickly and efficiently the athlete can more his/her body weight. Regular "fatness" checks are rapidly becoming an integral part of most fitness programs because they can show decrements in body fat and gains in muscle mass that cannot be seen by simply monitoring body weight on a scale.

Many elementary physical educators are including body composition assessment in their classes as part of a battery of fitness tests. The most common estimation method involves the use of skinfold calipers. This method is very time efficient with some formulas involving the use of only two sites (Heyward, 1991). While caliper assessment of body composition for children is quite practical in a classroom setting, there are concerns for its validity (Lohman, 1986). Occurrences of abnormal fat distribution, tight skin over the skinfold site, and extreme leanness are common in adolescents and can substantially reduce accuracy of skinfold body composition estimations.

Hydrostatic (underwater platform) weighing yields the most accurate determination of body composition and is considered the gold standard of comparison when assessing the validity of other methods. Unfortunately, the time and equipment expanse necessary generally prohibit the use of this method in a classroom setting. However, a recently developed method of estimating body volume in a pool while still using Archimedes' principle, called bottle buoyancy, may provide accurate results

while remaining inexpensive and feasible for a group setting.

The purpose of this study was to compare estimated body composition using hydrostatic (underwater platform) weighing with the bottle buoyancy (natant) weighing method and skinfold caliper assessment in adolescent males.

Methods

Approval to begin data collection was obtained from The University of Montana Institutional Review Board for Research with Human Subjects. Before participation, each volunteer was informed of the purpose of the study, any known risk factors, and the right to terminate participation at any time without penalty or prejudice. Each subject and his parents expressed consent to participate by signing a statement of informed consent.

Seventeen adolescent males attending Hellgate Elementary School in Missoula, Montana, were solicited to volunteer as subjects. Descriptive data as for the subjects revealed: age 12.959 ± 1.258 yr, height 62.388 ± 4.712 in. (158.466 ± 11.968 cm), weight 105.041 ± 23.397 lbs (47.638 ± 10.611 kg). Testing to estimate body composition by hydrostatic weighing, bottle buoyancy, and skinfold thickness measurements was conducted in the Human Performance Laboratory (121 McGill Hall on The University of Montana campus).

All data collection and computational analyses were conducted by experienced laboratory personnel following standard procedures, established formulas, and computer-based systems. Raw data were then reduced to descriptive terms using a QUATTRO-PRO (Version 3.0) data management spreadsheet program translated to an SPSS (Version 4.0) package on The University of Montana LEWIS mainframe computer for statistical analysis. Estimated body composition using the three assessment methods was compared using repeated measures analysis of variance (ANOVA). Pearson product moment correlations were then run between the three estimation methods to determine the relationship between variables and the predictive value of bottle buoyancy or skinfold measurements in comparison with hydrostatic weighing. Alpha (type I error) level for all analyses was set at the .05 level of statistical significance.

Methodology for Hydrostatic (Underwater Platform) Weighing Estimation of Body Composition

Hydrostatic (underwater platform) weighing provides the most accurate estimation of the body's fat and fat-free components and was used as the gold standard of comparison for the other two methods in this study. Water in the 585 gallon hydrostatic weighing tank was fixed at a temperature of 95° Fahrenheit (35° Celsius) which has a density of 0.94 grams/milliliter. Body composition is thus estimated on the basis that fat (density, 0.90 gm/ml) will float while lean or fat-free tissue (density, 1.100 gm/ml with a water content of 73.8%) will sink.

The testing procedure involves positioning the subject on an underwater platform suspended from a gram-sensitive scale. The subjects wore a weight belt to keep them securely in the chair during weighing. The weight of the chair and belt were determined and subtracted from the total underwater weight to determine the subject's net underwater weight. As the subject lowered himself underwater, he was instructed to breathe out as much air as possible. Several underwater weighings are recorded since it usually takes a few trials to "learn" to exhale maximally while submerged. The heaviest stable underwater weight was used for computation because this indicated the greatest exhalation of air. Both land weight and underwater weight were recorded very accurately because very

small errors can have a large effect on subsequent calculations. Residual volume, the volume of air that remains in the lungs after a maximal expiration was estimated using the formula by Boren, Koray and Syner (1966):

$$\text{Residual Volume} = 0.0115\ (\text{age}) + 0.019\ (\text{height in cm}) - 2.24$$

More precise measurements of residual volume using a pulmonary spirometer or oxygen-dilution procedures were not performed because this equipment is generally not available in a scholastic school setting.

Body volume was computed as land weight minus underwater weight due to the well-known law of physics known as Archimedes' principle. Total body density, the ratio of body weight to body volume which is a function of the respective amounts of each tissue type, was computed by the formula from Katch, Michael, and Horvath (1967): Body density =

$$\frac{\text{Land mass}}{\dfrac{\text{(Land mass - net underwater weight)}}{\text{Water density at 35°C}} - \text{residual volume}}$$

The percentage of fat weight was then determined from body density using the appropriate age-adjusted formula (Heyward, 1991):

Age (yr)	*Density to percent body fat formula*
11-12	(5.23/BD) - 4.81
13-14	(5.07/BD) - 4.64
15-16	(5.03/BD) - 4.59

Methodology for Bottle Buoyancy (Natant) Estimation of Body Composition

The bottle buoyance (natant) method also utilizes Archimedes' Principle to estimate body volume by determining the volume of water that is displaced by the subject in a static position 6 inches below the water surface (George & Divis, 1987). The natant procedure involves having the subject hold a plastic bottle (density of material, 1.0 gm/ml) to his chest that is filled with a mixture of water and air. The subject expels as much air as possible and submerges while the researcher notes if the subject sinks, floats, or maintains a neutral position. If the subject sinks, water is moved from the bottle (i.e., air is added). If the subject floats, water is added to the bottle. After several air/water adjustments, the point at which the subject remains neutrally buoyant about 6 inches below the water is determined. The air in the bottle is then measured using a graduated cylinder by filling the bottle to the top with water (1 ml of water is equivalent to 1 cc of air). Body density is then computed using the formula by Katch, Horgobatgyi, and Denahan (1989): Body density=

$$\frac{\text{Land mass}}{\dfrac{\text{Land mass - (air in bottle * water density)}}{\text{Water density}} - \text{residual volume}}$$

Following the occupation of body density, percent body fat was determined using the three age-dependent formulas mentioned earlier (Hayward, 1991).

Methodology for Skinfold Thickness Estimation of Body Composition

Estimated body composition by skinfold measurements was computed using the methodology of Boileau, Lohman, and Slaughter (1985). Tricep skinfold thickness was recorded as a vertical fold located midway between the right olecranon and the acromion process on the posterior aspect of the upper arm. Subscapular skinfold thickness was recorded as a diagonal fold in the natural cleavage of the skin at the inferior angle of the right scapula. The average of triplicate measures using Country Technology Incorporated (model 68910) calipers was utilized. These inexpensive, plastic calipers were used because this type of

caliper is commonly available to physical education instructors in a school setting. The following equations were used to compute percent fat weight:

Age (yr)	Skinfold measurements to percent bodyfat equations
6-11	Percent fat weight = 1.35 * (sum of triceps + subscapular skinfold) - 0.012 * (sum of the triceps + subscapular skinfolds)^2 - 3.4
12-14	Percent fat weight = 1.35 * (sum of triceps + subscapular skinfold) - 0.012 x (sum of the triceps + subscapular skinfolds)^2 - 4.4
15-17	Percent fat weight = 1.35 * (sum of triceps + subscapular skinfold) - 0.012 * (sum of the triceps + subscapular skinfolds)^2 - 5.4

Results

Estimated percent fat weight and percent fat free weight for the 17 adolescent males are: percent weight of the hydrostatic weighing method averaged 13.789 ± 6.523%, bottle buoyancy was 16.240 ± 5.760%, and for skinfold measurement was 15.521 ± 5.041%. Average fat-free weight for the hydrostatic (platform) weighing method was 90.547 pounds (86.202%), and for skinfold thickness measurements was 88.736 pounds (84.479%). Repeated measures analysis of variance (ANOVA) revealed no significant difference in estimated body composition between the 3 methods (Figure 1).

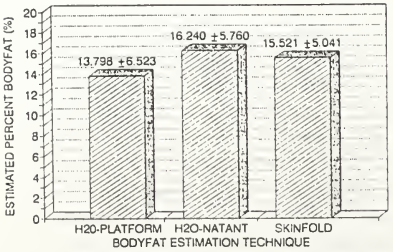

Fig. 1. Percent Bodyfat Comparison of Adolscent Males (N=17)

Pearson product moment correlations between the 3 estimation methods revealed that the hydrostatic platform body composition estimations correlated significantly ($p \leq .01$) with both the natant ($r = .8534$) and skinfold appraisals ($r=.6537$). A correlation matrix is shown in Table 1 and the

	Platform	Natant	Skinfold
Platform	1.000	.8534**	.6537**
Natant		1.0000	.5579*
Skinfold			1.0000

* Significance level = .05

** Significance level= .01 (2-tailed tests)

Table 1. Pearson product-moment correlation matrix of the 3 body composition estimation methods

predictive values are displayed graphically in Figures 2 and 3. A lower correlation was noted between the bottle buoyancy and the skinfold thickness ($r = .5579$, $p \leq .05$) procedures but the major questions of interest of this study were the individual relationships of the bottle buoyancy and skinfold methods with hydrostatic weighing (gold standard).

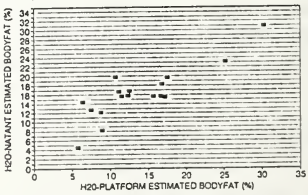

Fig. 2. H_2O Platform vs. H_2O Natant Bodyfat Comparison ($r = .8534$, $p < .01$)

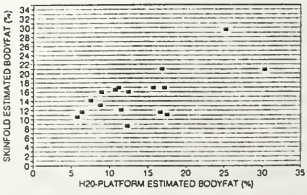

Fig. 3. H_2O Platform vs. Skinfold Bodyfat Comparison ($r = .6537$, $p < .01$)

Conclusions

The results of this study revealed no significant difference between estimated body composition using hydrostatic weighing, bottle buoyance, and skinfold measurements in adolescent males. Correlational analyses further demonstrated that the bottle buoyance and skinfold assessment methods are both accurate estimations of body composition in adolescent males as compared to the hydrostatic platform method (gold standard).

The bottle buoyance method revealed the highest correlation with hydrostatic weighing ($r = .8534$, $p \leq .01$). Accumulating several natant bottles is very inexpensive, thus making the estimation of body composition quite practical for a large group of students in a pool setting. During data collection for both underwater methods, most subjects required several practice attempts to achieve acceptable results but with proper supervision the natant method is very suitable for well-motivated students. One instructor can oversee several simultaneous groups of student, thus making body composition assessment a "hands-on" class activity with little "down-time" of students waiting in line to be tested. Having students calculate their own body density and percentage of fat and fat-free weight makes an excellent interdisciplinary class assignment. Body composition determination is an extremely valuable assignment in teaching health and fitness concepts in a physical education unit while reinforcing principles learned in math and science (i.e., measurement techniques, metric conversion, Archimedes' principle).

Body composition estimation by skinfold thickness also correlated highly with hydrostatic weighing ($r = .653$, $p \leq .01$). As mentioned earlier, however, occurrences of abnormal fat distribution, tight skin over the skinfold site, and extreme leanness are common and difficult to account for during skinfold calibration in adolescents. This can substantially reduce the predictive accuracy of skinfold measurements in children. Additionally, many physical educators in schools are using skinfold estimation formulas designed for adults. Estimating body composition in children using adult formulas is not appropriate because they do not consider the changing fat-free weight density of a child/adolescent during different stages of maturation. Prepubescent and pubescent children deviate considerably in fat-free body composition (i.e., muscle, bone, connective tissue, internal organs, fluids from the adult reference male). This generally leads to a body fat overestimation of approximately 5% in adolescents when using conventional adult body composition estimation formulas (Lohman, 1986). There are dozens of different population-specific evaluations to estimate body composition from skinfold measurements (Heyward, 1991). These equations were developed for relatively uniform populations with several critical assumptions including age, gender, ethnicity, and activity. The extreme fluctuations in maturation during adolescent growth spurts may violate several assumption of these formulas.

It should also be noted that reliability between the 3 methods was established during this study but validity of the measures is not possible The validity of hydrostatic weighing is determined by cadavers (McArdle, Katch, and KIatch, 1991) and other estimation formulas are based on these original data. Therefore, all estimations are simple "estimations" and the focus of body compositions analyses should be on how fat and fat-free weight change over time in an individual interested in fat weight also and/or sports conditioning.

Practical Applications and Summary

Practically speaking, body composition evaluations provide valuable information regarding health status, fitness level, and

athletic conditioning. Regular "fatness" checks are rapidly becoming an integral part of most fitness programs because they can show decrements in body fat and gains in muscle mass that cannot be seen by monitoring body weight on a scale. Looking at data from a number of studies, the average percent body fat is about 11-14% for adolescent males and about 17-23% for adolescent females (Lohman, 1986). While the degree of overfatness that can be defined as clinical obesity remains controversial, it is well established that the *average* body composition is not necessarily *ideal* body composition in American children and adults today.

With aging, percent fat weight generally increases even though scale weight can remain stable. This is probably due to declines in resting metabolic rate and general activity level. For example, a person may weigh 130 pounds during school days — still weigh 130 pounds at age 40 — but the percentage of body fat may have more than doubled. This "creeping obesity" makes many people "overfat" even though they do not appear to be "overweight." Recent research has suggested that this age-related shift in body composition may not be a necessary occurrance and can be prevented by diet and exercise.

Athletes, depending on their sport, generally have lower body fat percentages but an exact body fat recommendation for individual athletes is dependent on body type and also the demands of different sports (Wilmore, 1983). For example, a football lineman with large bones may need to carry about 25% fat while a high school wrestler competing in the 103-pound category may need to be about 4% fat. Generally speaking, overfatness decreases running speed, jumping ability, and body heat dissipation and endurance capacity by restricting how quickly and efficiently the athlete can move his/her body weight. In addition to assessing percent fat weight, a body composition check also evaluates muscle weight gains due to strength training. For example, a 105-pound student (the mean weight for subjects in this study) who is 14% body fat (mean hydro platform percent fat in this study) has 86% fat-free weight (90.3 pounds). The weight of muscle will increase more than the other constituents of lean body weight (i.e., bone, internal organs, connective tissue) with a weight lifting program. Therefore, an increase in lean body weight from 90 pounds to 94 pounds or higher would accurately quantify gains in muscle through strength training. Regular exercise causes a gain in lean body weight (due to an increase in muscle mass) in addition to slowly chipping away at the body's supply of storage fat even though scale weight remains stable.

Excesses in fat weight have been linked to the development of heart disease, hypertension, stroke, diabetes, kidney malfunction, and low back pain. When a reduction in body fat is desirable, a combination of diet and an exercise program with the goal of reducing about one pound of fat weight per week appears to be the most flexible and efficient. When food intake is equally compensated by energy output through exercise and daily activity, the body is said to be in equal caloric balance. When input exceeds output, the body will gain weight (positive caloric balance); when output exceeds input, the body will lose weight (negative caloric balance). To lose one pound of fat per week, the body needs to be in a negative caloric balance of 500 calories per day. A diet and exercise program allows considerable flexibility in accomplishing this. For example, eliminating a 300-calorie milkshake and adding a 200-calorie half-hour workout in a day will achieve 500-calorie deficit. In seven days, this will burn the 3,500 calories that are stored in one pound of fat. A nutritionally sound diet with a mild calorie restriction

combined with regular exercise can safely reduce percent body fat and body weight while also developing and maintaining lean muscle mass.

In conclusion, periodic body composition testing is vital to evaluating short- and long-term progress during a weight reduction program that emphasizes regular exercise and proper diet and also during sports conditioning. Assessing the body's percentages of fat and fat-free weight shows decrements in body fat and gains in muscle mass that cannot be seen by simply monitoring body weight on a scale. It is recommended that persons monitor their body composition over 6-8 weeks. Data from this study indicates that body composition estimations via the bottle buoyance and skinfold calipers are similar to hydrostatic platform weighing in adolescent males. The natant method revealed the highest correlation with hydrostatic weighing probably because it eliminates several well documented problems associated with estimating body composition from skinfold measurements. Assessing body composition and stressing its importance at a young age is one way to assist in the prevention of lifestyle diseases and promote a healthier lifestyle.

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INGREDIENTS FOR A DRUG ABUSE PREVENTION PROGRAM

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Drug use affects people of all ages, and is a major threat to the "health, welfare, and economy of the country" (Herrington, Jacobson, & Benzer, 1990). Goals and objectives define a decrease in drug abuse related problems and have been determined through a consortium which developed *Healthy People 2000: The National Health Promotion and Disease Prevention Objectives* (1991). The United States has taken major steps in the past decade to try to change the drug problems but further steps need to be taken if we hope to reach the defined goals by the year 2000. To explain how a prevention program can make a difference in your community, following is a brief description of the current state of adolescent drug use, a description of methods being used to prevent drug use, and some positive steps in developing a successful prevention program.

The statistics which reflect drug use by adolescents in the U.S. are not positive. Approximately 80% of the adolescents have tried illicit drugs, 91% of the nation's seniors have tried alcohol, and 68% have tried cigarettes (Holcomb, Sarvela, Ritzel, Sliepcevich & Jellen, 1990). By age thirteen, 22% of girls and 30% of boys classify themselves as drinkers (Rosenbloom, 1987). A recent study determined 41% of children under nine had experimented with cigarette use (Price, Telljohann, Roberts & Smit, 1992). Each year approximately 957 million packs of cigarettes are being consumed by children under the age of 18 (Price, et al, 1992). The statistics reflect that drug use among adolescent is still high, but some positive changes have occurred with the reduction of illicit drug use. The use of illicit drugs is higher than it was 20 years go, but has decreased by one to 2 percent each year from 1979 to 1987 (Goodstadt, 1989).

As the above statistics reflect, drug use in the U.S. is a serious problem. Several programs, therefore, have been implemented to try to reduce drug use. The "War on Drugs," initiated by the federal government, focuses on attacking the drug dealers and suppliers (Schlaadt, 1990, p. 58). The government has tried to intervene by decreasing the supply of drugs, but it has not changed the demand for drugs. Only time will reveal how the Clinton Administration will confront the "War on Drugs."

Educators have taken another approach to the "War on Drugs" — prevention strategies (Schlaadt, 1990, p. 58). Prevention strategies used by educators mainly involve educating children about drugs, the effects of drug use, and refusal skills. The implementation of drug use prevention programs are rapidly increasing throughout the U.S. and implementation of these programs is a healthy beginning to help prevent drug use.

The drug prevention programs that have been the most effective involve, at a minimum, the following key areas: "(1) planning, (2) school policy, (3) staff in-service, (4) curriculum, (5) parent involvement, (6) intervention, (7) community involvement, (8) positive alternative for student activities, recreation and social development, and (9) evaluation" (Schlaadt, 1990, p 58). It is important for a program to be designed specifically for the community involved: each community has different factors, such as rural vs. urban, conservative vs. liberal, wealthy vs. low income, and different races that can help to determine the type of pro-

gram that will be the most effective (Hawes, Benton & Bradley, 1990; Beck & Summons, 1990).

Drug use is a national problem and it cannot be confronted by individual forces alone; it is critical to have programs that integrate families, the community, government, religious communities, and educators (Dunkle, 1990). According to a survey conducted by *Join Together*, a national resource for communities fighting substance abuse, coalitions against substance abuse are strongest in areas where school and local law enforcement agencies are involved, but few coalitions involve labor, business, religious groups, and media (Stein, 1992).

Community organizations can enhance substance abuse prevention programs in a variety of methods, ranging from expertise to financial resources. One example of the importance of community members involves religious leaders. Religious leaders are important in substance abuse prevention coalitions because they may help tap into the spiritual needs of drug users, but due to denial, lack of priority and organization, few religious leaders get involved (O'Laughlin, 1992). Another important factor is that community coalitions dealing with substance abuse prevention tend to focus on community wide prevention rather than individual prevention (Stein, 1992).

School based prevention programs tend to focus more on the individual and family needs. According to Bonnie Bernard, the movement for new prevention programs involves the "resiliency approach," which involves focusing on strengths and protection rather than focusing on negative factors (1993). Resilience involves "creating family, school, and community environments in protective factors of caring, high expectations, and opportunities for meaningful participation" (Bernard, 1993, p. 4).

Heath education and prevention programs can make a

> ...positive difference, but the ultimate impact on behavior is heavily dependent upon a number of factors, such as teacher training (administrative support), extent and degree of program implementation, time allotted for instruction, involvement of parents and family, community support, and the overall comprehensiveness of the curriculum (Seffrin, 1990, p. 153).

Communities have a chance of developing successful programs if they can define the problem, assess the needs, review programs that have worked in similar community stettings, utilize community resources, gather necessary knowledge, incorporate the previously mentioned areas, and evaluate the program after implementation. The summarized key to a successful drug prevention program is working together to provide a balanced integration of knowledge and resources. For positive change to occur and to achieve the Health People 2000 objectives, there is a "need for all people working in alcohol and other drug prevention fields — whether from a community, state, federal, or private agency — to work together in a spirit of collaboration, sharing their commitment, resources, and ideas" (Laws, 1993, p.3).

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Great Ideas?
Suggestions?
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PLYOMETRIC TRAINING FOR HIGH SCHOOL ATHLETES

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Plyometrics is a conditioning technique used to enhance performance in sports that require explosive speed and power along with quick change-of-pace, stop-and-go movements. Although plyometrics has only recently caught on in American training programs, it was developed years ago in the Soviet Union and Eastern European countries. Many high school athletes are now experimenting with plyometrics to improve their jumping, throwing ability, etc. Therefore, it is important that teachers and coaches have a sound knowledge of the physiology of plyometrics in addition to teaching correct drills and proper techniques.

Also called bounce loading or rebound jumping, plyometrics implements a "cocking" action via a rapid stretching of a muscle group from an eccentric (lengthening) contraction to a concentric (shortening) contraction. This muscular "cocking" is necessary to gain maximal vertical jump when playing basketball or volleyball and maximum arm speed when throwing a baseball, football, or javelin. This quick stretch-shortening cycle is the major factor in many sporting events and its importance in training has long been underestimated if not completely overlooked.

The physiology behind plyometric training is that a muscle which is contracted immediately after being stretched will produce greater force than a muscle that has not been pre-stretched. The faster a muscle is allowed to lengthen during pre-stretch, the greater the tension it can exert. Additionally, the less the amount of time in the pre-stretch position, the greater the acceleration. Receptors within the muscles called muscle spindles react to a sudden pre-stretch by sending nerve signals to the spinal cord. Milliseconds later this results in a reflex contraction of the same muscle fibers that were stretched. This serves to resist the stretch on the muscle and protect against possible injury. Plyometrics thus "fools" the muscle spindles, which react to defend against injury, and in the process generates greater muscular force. This is known to muscle physiologists as the "myotatic stretch reflex."

Plyometric training also utilizes the elastic recoil potential within the muscle to increase strength. An intricate elastic structure within and surrounding the muscles provides stability and integrity within each muscle fiber. During plyometric training, these elastic elements act like a rubber band that has been stretched and suddenly released. The force generated in the eccentric muscle contraction is converted into an equal and opposite force during the concentric contraction. Gains in joint range of motion and flexibility are also seen as these elasticity properties develop as well as gains in joint stability and strength due to tendon and ligament adaptations.

Another advantage of plyometrics is that the central and peripheral nervous systems are trained to react with maximum speed, thus stimulating the muscles to shorten rapidly and produce maximum force. A skeletal muscle fiber must be innervated by a motor neuron in order to contract. Even if you beat a muscle fiber with a hammer it will not contract; it must be stimulated by a nerve. The muscle fiber together with the nerve that it innervates is known as a motor unit. When a muscle fiber is stimulated, the

resulting contraction of that fiber is maximal. A stimulated muscle fiber does not contract partially, it contracts maximally or not at all. This is the concept behind plyometrics. When done correctly, plyometric exercises stimulate a massive amount of muscle fibers very rapidly and with great force. Therefore, the benefits of plyometrics are like no other training exercise in the world for producing gains in explosive power, quickness and coordination. Universal weight machines, stair-climbers, and stationary bikes provide great aerobic and muscular workouts but only provide minimal neural coordination training because of their slow contraction speed. The level of neuromuscular training needed to improve coordination in most sports can only occur when the muscle is stretched rapidly and with large amounts of force, as is the case with plyometric training.

Athletes who have a higher percentage of fast-twitch muscle fibers will benefit more from plyometrics that athletes with more slow-twitch fibers. These athletes are easy to identify because they will tend to develop larger muscles through weight training, etc. Fast-twitch muscle fibers are fast-contracting, require anaerobic (without oxygen) energy metabolism of carbohydrate, and are activated during speed and power movements. Slow-twitch fibers generate energy aerobically (with oxygen), can utilize both carbohydrate and fat, and are used to sustain continuous, endurance activities. Plyometrics will only train fast-twitch muscle fibers and thus are only advantageous when training for fast-twitch activities such as sprinting, jumping, and the throwing events in track and field.

One of the most popular forms of plyometrics is depth jumping. This involves having an athlete jump from an elevated surface, land simultaneously with both feet, immediately performing a maximal vertical jump to the top of the platform, and repeating for several repetitions. Load can be varied by jumping off platforms of different heights (as high as 10 feet have been reported in Soviet conditioning regimes) and attaching weight belts to the body. Obviously, this form of plyometrics is very dangerous and young athletes or beginner should never attempt jumps from these extreme heights. Similar benefits can be gained by repeated depth jumps from heights not exceeding 20 inches. Training is manipulated by varying the number of sets per session and number of repetitions per set. The frequency of workouts should be restricted to no more than two plyometric workouts per week. Other variations of lower-body plyometrics are recommended for high school athletes. Some of these include lateral jumping over boxes, double leg tuck jumps, hopping/skipping takeoffs on one or both feet, and bounding in long, loping strides. If depth jumps are done, they should be performed on soft surfaces (matts or grass) from low heights, and should be conducted within the mechanical action of the sport-specific range of motion for which you are training. A 6 to 10 pound, baseball-sized, plyoball is commonly used in upper-body plyometrics simulating throwing, catching, and rotational exercises for the shoulder girdle, trunk and abdomen.

Plyometrics are most beneficial when conducted during the peaking phase of periodization training (immediately prior to the competitive season). Depth jumping should not be used throughout the entire year because of the potential for injury, and especially not when athletes are just beginning a strength training program. Coaches should carefully monitor athletes on an individual basis for overuse injuries such as tendonitis. It is also recommended that coaches have knowledge of the athletes injury history before starting a plyometric program and that they follow several safety precautions when supervising plyometrics (Table 1).

Table 1. List of safety precautions to be followed when performing plyometrics

1. Prepubescent athletes should be strictly supervised and perform "low impact" plyometrics (injuries to joints, epiphysis, growth plates are more serious).
2. Follow a "less difficult" to "more advanced" progression.
3. Achieve an adequate strength base before beginning. Plyometrics are always a supplement and not a replacement for strength training.
4. Check medical history and injury history of athletes.
5. Training surface should be semi-resilient (rubberized track, grass, wrestling mats).
6. Select footwear with lateral stability, arch support, heel cushion, and non-slip soles.
7. Boxes should be sturdy and carpeted and not higher than 20 inches for high school athletes.
8. Proper warm-up and cool-down should encompass training sessions. A good stretching routine before and after plyometrics is essential.
9. Plyometrics should precede other activities during practice sessions while athletes are "fresh."
10. Correct spotting techniques should always be employed (especially for depth jumps).
11. Perform no more than 2 plyometric sessions per week with at least a 48-hour rest between workouts. No longer than 30 minutes per session with 3 to 7 drills. Perform 2 to 3 sets of each exercise (depending on difficulty) with 8 to 12 reps per set, and a 2 minute rest between sets.
12. Keeping in mind that high school students will probably try plyometrics on their own — proper instruction in physical education courses or athletic practice sessions is critical.

Plyometrics should not be used in place of other training but should be used to supplement overall sport-specific conditioning involving periodization weight training and interval sprint training. A few coaches have recommended that an athlete build up enough strength to squat double their body weight before starting lower-body plyometric training. However, this is not absolutely necessary since the load and intensity of the plyometric exercises can be adjusted to suit even the beginning athlete. Athletes should start with elementary drills such as skipping and hopping before they progress to more advanced exercises.

In conclusion, all sport movements depend on an athlete's ability to overcome the inertia of his/her own body weight or an external object. Plyometric training utilizes body weight and the force of gravity during bounding drills and the external force of an object during plyoball drills to train the stretch-shortening cycle and increase muscular speed and explosive power.

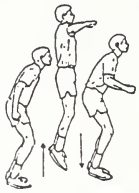
Following are several lower and upper body plyometric drills that are recommended for high school student-athletes. The authors highly recommend a book entitled J*umping into Plyometrics* by Donald Chu (Human Kinetics) if you desire more information regarding plyometric drills. During the power phase of training, 3-5 sets of 15 repetitions with 1 minute rest between each set should be performed. During the conditioning phase, 4-5 sets of 15 repetitions with 15-30 seconds rest between each set should be performed.

Lower Body Plyometric Drills

1. *Ankle Hops and Jump and Reaches.* Using only the ankles for momentum,

hop continuously in one place while extending the ankles to their maximum range on each hop. This can be performed continuously on both feet or one foot. Try hopping backwards or forwards as soon as coordination develops. Progress to a full body jump-and-reach working in the upper legs and trunks as soon as ankle hopping is mastered.

Two-Foot Ankle Hop



Double Leg Hops

Single Leg Hops

Hip-Twist Ankle Hop

2. *Power Skipping*. Holding both arms in front of the body at shoulder level, move forward in a powerful skipping motion, bringing your lead knee up to our hands. Emphasize powerful knee drive to your hands, spending as little time on the ground as possible.

Power Skipping

3. *Lateral Box Jumps*. Jump laterally from the ground to the top of the box, and down off the box on the opposite side. Immediately jump laterally back to the top of the box and off to the opposite side. This exercise is programmed to promote coordination and balance during a quick and explosive lateral motion. Emphasize powerful explosion from the ground to the top of the box and a minimal amount of time on the ground and on the box.

Lateral Box Jump

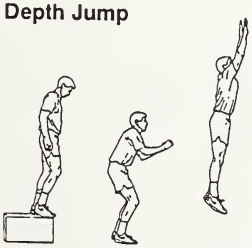
4. *Front Box Jumps*. Jump from the ground to the top of the box; once you land on top of the box do a maximal

vertical jump off of the box, land, and quickly do a maximal leap for distance. Emphasize spending as minimal amount of time as you can on the box and the ground when you jump off of the box.

Front Box Jumps

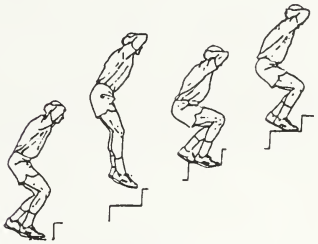
5. *Depth Jump*. Depth jumps should be performed on a box that is not more than 30 inches off the ground. Step from the box, landing on both feet, and springing up with as little ground time as possible. Bend at the knees slightly when landing, but do not perform a full squat position. Emphasize explosive jumps from the ground for height and distance. Emphasize quick jumps with minimal time spent on the ground.

Depth Jump



6. *Stadium Hops*. Jump to the first step and continue up making your landings light and quick. Progress to two stairs per jump and/or with hopping with one leg continuously. It is not recommended to stadium hop down the stairs. Emphasize deep hops while using two stairs per jump. Emphasize minimal ground time while using every step.

Stadium Hops



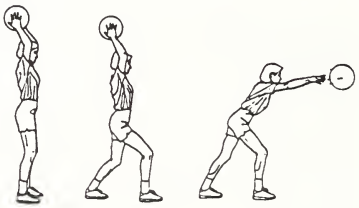
Upper Body Plyoball Drills for High School Students

1. *Two Hand Chest Pass*. Hold the plyoball in both hands with the thumbs pointing inward and toward each other. Push the ball straight out with a quick powerful motion, emphasizing full extension of the elbows and ending with a sharp flick of the wrist. This exercise can be performed in the standing, kneeling or sitting position. When conducted in the kneeling or sitting position, there will be more isolation on the upper body. Perform the chest pass with a partner or by throwing the ball against a wall. Variations of this

Two Hand Chest Pass

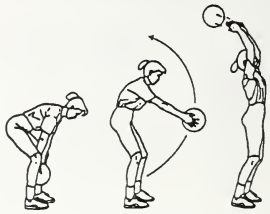
exercise include adding a twist to either side of the body just prior to throwing, and adding two or three steps leading up to the throw.

2. *Overhead Throw.* Using both hands, bring the plyoball back over your head. While keeping your feet planted firmly, extend your back and shoulders as far as possible. The forward throwing motion should start slow at first (to avoid abdominal injury) and pick up speed through the range of motion and end with a powerful abdominal contraction and quick chopping motion of the arms and hands. This exercise is done standing or kneeling and can be done with or without a partner. Variations include adding a twist to either side of the body prior to throwing. Athletes can also add one, three, or five steps leading up to the throw, remembering to throw off of the opposite foot of their dominant hand.



Overhead Throw

3. *Backward Throw.* Hold the plyoball with both hands and take it back between your legs. Bend the knees slightly outward to accommodate this. Make sure to bend at the waist but keep the back straight. The throwing motion should begin slowly, keeping the back straight and straightening out the legs. Once momentum is established, the movement should become more rapid, ending with a powerful, simultaneous extension of the legs, back and shoulders. Concentrate on throwing the ball as high and as far as you can to assist in a good extension at the end of the throw.



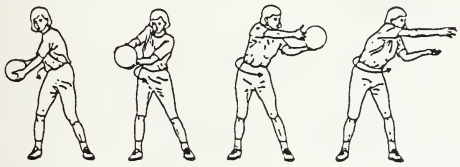
Backward Throw

Single Arm Overhead Throw

4. *Single Arm Overhead Throw.* Hold the plyoball in one hand and rotate the hips and shoulders toward the ball. Extend the ball back as far as possible. Using the entire body and letting the throwing arm act like the end of a whip, bring the ball above the shoulder, through the throwing motion, and release it with an explosive extension and follow through of the throwing arm. A follow through step is permitted and most likely unavoidable if this exercise is done correctly. For more isolation on the upper

body and especially the shoulder girdle, do this exercise kneeling.

5. *Lateral Squat Twist Throw.* Hold the plyoball in front of you with both hands, palms up, and thumbs pointing away from each other. Stand with your back to the wall or your partner, holding the ball off of the hip. With a long powerful movement, swing the ball off of the hip and throw it over the opposite shoulder. Keep your feet from pivoting when you make the throw. Emphasize full simultaneous extension of the legs, trunk, and arms.



Lateral Squat Twist Throw

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NEWS/DATES/ANNOUNCEMENTS

38th Annual AAHPERD Leadership Development Conference

June 9-12, 1993
Reston, Virginia

Tentative Highlights

Wednesday, June 9
- Introduction of State Elects
- National Association Panel Presentations and Round Table Session with Executive Director
- District Association Panel Presentations with District Reps
- President's Reception

Thursday, June 10
- Early Bird Walk/Run
- District Leaders Breakfast Meeting
- AAHPERD President Presentation
- District & State Executive Director's Orientation Meeting
- Special Events Office Presentation
- Current Events and Action Strategy Development for Elects
- District & State Executive Director's Luncheon Meeting
- Afternoon Free Time to Visit D.C. (transportation provided) ***or***
- Golf & Tennis

Friday, June 11
- Early Bird Walk/Run
- Alliance Center Tours
- Inspirational Slide Show
- AAHPERD Past President's Presentation
- Student Major Presentation
- District & State Executive Director's Luncheon Meeting
- Class of '93 Photo Session
- Picnic with Alliance Center Staff
- President's Council Presentation
- AAHPERD President-Elect Presentations
- States by District Meeting on AAHPERD Proactivity
- District & State Executive Director's Meeting with Executive Committee
- District Rep Meeting with EVP
- Legislative Networking Session
- Local Association Network Session
- District & State Executive Director's Meeting with District Reps
- District Reps Meeting with President's Elect District Dinners

Saturday, June 12
- National District and State Executive Directors No Host Breakfast
- Public & Media Relations Presentation
- Meeting with National Association Executive Directors
- District & State Executive Director's Meeting
- "Open Mike" — Group Discussions
- Reception & Banquet

Why should you join the American Alliance for Health, Physical Education, Recreation, and Dance?

- **Update.** The only national newspaper specifically devoted to news and features on health, physical education, sports and athletics, leisure, dance, and related disciplines. Upcoming events and job exchange information are just two of the regular features in each of the nine issues.
- **Award-winning Periodicals.** Members have their choice of subscriptions to one, two or three of our in-house periodicals; Journal of Physical Education, Recreation, and Dance; Health Education; and Research Quarterly. From current issues in physical education, teaching ideas, curriculum development and feature articles on physical education, sport, and leisure, to specific issues in health and research fields, these Alliance periodicals fully cover HPERD disciplines.
- **Annual Conventions.** Six major conventions are annually scheduled — one national convention and five regional conventions. The programs and allotment reflect the current issues and trends within all Alliance disciplines.
- **National Association Affiliations.** The Alliance houses six national associations representing the HPERD disciplines. Each Alliance member is automatically eligible for membership in any two of these associations.
- **Substructure Participation.** Every association is comprised of a variety of substructures (committees, councils, societies, etc.), addressing specific areas within the particular discipline. You can join up to six substructures from your chosen association membership. We solicit your active participation and input for organizational strength and leadership in defining the association's roles and goals.
- **Conferences and Workshops.** Using membership strength, all HPERD interests (from teaching to research to officiating) are fully covered. Specifically tailored to your interests and organizational goals, these conferences are promoted and provided around the country and throughout the year.
- **Newsletters.** The individual associations publish a wide variety of newsletters, which you receive in addition to Update. These address the issues and concerns of Alliance substructures. Once again, active involvement from you is key to this process.
- **Publications.** You receive an annual publications catalog listing books, software, and audiovisual materials. On average, 14 new publications are added annually to our stock of over 200, which address all HPERD interests. Discounted prices are available to members. We also invite members to submit manuscripts for editorial review and publication.
- **Placement Service.** In addition to Update's job exchange, the Alliance maintains a database of position openings and resumes of Alliance members seeking a change. This service is free to any member.
- **Group-rate Programs.** From professional liability coverage to long-term disability, the Alliance offers optional insurance plans at discounted rates (based on membership strength).
- **Discounts and Free Services.** Services such as job placement, group travel packages, and discounts on auto rentals and moving expenses are always available through your membership in the Alliance. Offered at low or no cost, these services are constantly being added to or upgraded.

Why not give the Alliance a try?

We've got a lot of benefits waiting for you. and what benefits you as one interested in an HPERD discipline, benefits your colleagues too!

Detailed information (toll-free numbers, addresses, etc.) on various services/benefits will be forwarded with your membership card in the new member information packet.

MONTANA ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE

MEMBERSHIP APPLICATION FORM

Mr.(1)
Ms. (2)_____ Phone ( ) _____ Date __/__/__
(Print) Last First MI

Home Address _____
Street City State Zip Code

Business Address _____
School or Agency City State Zip Code

Type of Membership (Check One)

Professional ____ (1) $15
Student ____ (2) $5
Retired ____ (3) No Cost

Previous MAHPERD Member:
____ Yes ____ No

AAHPERD Member:
____ Yes ____ No

Professional Employment/Involvement

Elementary	___	(1)
Secondary	___	(2)
College	___	(3)
Government	___	(4)
Administration	___	(5)
Health Club	___	(6)
Corporate/ Agency Fitness	___	(7)
Recreation	___	(8)
Student	___	(9)

Main Areas of Interest

Elementary	___	(1)
Secondary	___	(2)
College	___	(3)
Adapted	___	(4)
Fitness	___	(5)
Health Education	___	(6)
Girls/Womens Ath	___	(7)
Boys/Mens Ath	___	(8)
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Recreation	___	(10)
Dance	___	(11)

☐ Check here if you ran a JRFH event last year.

Make Checks Payable to: MAHPERD

Membership year: October 1 through September 30

Mail to: Scott Richter, Treasurer
HHP, The University of Montana
Missoula, MT 59812-1055

THE RESOURCE

Please Listen to What I'm Not Saying

Don't be fooled by me. Don't be fooled by the face I wear. For I wear a mask, I wear a thousand masks, masks that I am afraid to take off; and none of them are me.

I give you the impression that I'm secure, that confidence is my name and coolness my game, that the water's calm and I'm in command, and that I need no one. But don't believe me. Please.

My surface may seem smooth...beneath I dwell in confusion, in fear, in aloneness. But I hide this. I panic at the thought of my weakness and fear of being exposed. That's why I frantically create a mood to hide behind, nonchalant, sophisticated facade to shield me from the glance that knows. But such a glance is my salvation. And I know it.

It's the only thing that can assure me of acceptance and love. I'm afraid you'll think less of me, that you'll laugh, laugh would kill me. So I play my game, my desperate pretending game, with a facade of assurance without, and a trembling child within. And so my life becomes a front.

I idly chatter to you in the suave surface tones...I tell you everything that's nothing, and nothing of what's everything, of what's crying within me. So when I go into my routine, do not be fooled by what I am saying. Please listen carefully to hear what I am not saying.

I dislike the superficial, phony game I'm playing. I'd like to be genuine, spontaneous and me. You've got to hold out your hand even when it seems to be the last thing I seem to want, or need. Only you can call me into aliveness. Each time you're kind, and gentle, and encouraging, each time you try to dislike the superficial, phony game I'm playing. I'd like to be genuine, spontaneous and me. Each time you're kind, and gentle, and encouraging, each time you try to understand because you really care, my heart begins to grow wings, small wings, very feeble wings.

I want you to know how important you are to me, how you can be a creator of the person that is me if you choose to. But it will not be easy for you. A long conviction of worthlessness builds strong walls.

The nearer you approach me, the blinder I may strike back. I am irrational. I fight against the very things I cry out for. But I am told that love is stronger than walls, and therein lives my hope. Please try to beat down those walls with firm hands, but with gentle hands — for a child is very sensitive.

Who am I, you may wonder? I am someone you know very well, I am every man and woman you meet.

— Anonymous

The Second International Symposium on Leisure and Ethics *will be held in conjunction with the AAHPERD National Convention in Denver in April 1994. The AALR sponsored symposium will address a broad scope of topics including leisure, ethics and philosophy; moral development and the leisure experience; multi-disciplinary works in leisure and ethics; moral life and professional practice in leisure, science and service; and global perspectives on leisure.*

Gerald Fain, symposium coordinator, has distributed a Call for Papers. For further information, please contact AALR, 1900 Association Drive, Reston, VA 22091. Phone (703) 476-3472, FAX (706) 476-9527.

© AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE

NATIONAL ASSOCIATIONS

AALR
American Association for Leisure and Recreation

AAHE
Association for the Advancement of Health Education

ARAPCS
Association for Research, Administration, Professional Councils, and Societies

NAGWS
National Association for Girls and Women in Sport

NASPE
National Association for Sport and Physical Education

NDA
National Dance Association

DISTRICT ASSOCIATIONS

STATE ORGANIZATIONS

NORTHWEST DISTRICT	CENTRAL DISTRICT	SOUTHWEST DISTRICT	SOUTHERN DISTRICT	MIDWEST DISTRICT	EASTERN DISTRICT
Alaska	Colorado	Anzona	Alabama	Illinois	Connecticut
Idaho	Iowa	California	Arkansas	Indiana	Delaware
Montana	Kansas	Guam	Florida	Michigan	Washington, D.C.
Oregon	Minnesota	Hawaii	Georgia	Ohio	Maine
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	Wyoming		South Carolina		New York
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			Tennessee		Puerto Rico
			Texas		Rhode Island
			Virginia		U.S. Virgin Islands
					Vermont

From Mark Pankau, National Director of District & State Relations...

Many good programs and ideas arrive daily at the District & State Relations Office. Following are some of those interesting tidbits; may they assist your association in future plans.

"State Board Eliminates P.E." What would you do if your local newspaper flashed this headline? How would you feel? More importantly, what have you done (or are doing today) to prevent such a cut from happening? Change is coming — will you control it or be controlled?

This Isn't Rocket Science! — Much of what can be done in our disciplines to advance the cause is not beyond our reach. It is not high tech stuff. But it does require planning. A plan of advocacy, a plan of public relations, a plan of selling the profession and a strong applied strategic plan to tie them together. ***Do It for the Cause – Because !***

With all the great conferences, workshop and conventions, don't forget to plan sessions on **Future Direction** discussions with members, advocacy, marketing, public relations — yes, how to sell the profession today. We are in sales. Are you the top salesperson in your area?

I Move That... The three most important words toward change are those found on association motions forms. Our future rests in these three words coming from you. The power to change is just waiting to be explored. And by chance if one of your motions fails, don't be discouraged, it's probably not personal. Maybe the time is not quite right or more ownership in the new idea must take root. Whatever the reason, if you believe your idea to be a good one, then bring it back up at the next board meeting. Part of the board will be new and they may think your idea's time has come. "...rest if you must, but don't you quit!"

ADVERTISING RATES

Montana Journal

Space	1 Issue	2 Issues
1 page	$35.00	$60.00
1/2 page	20.00	37.00
1/3 page	15.00	28.00
Inside Covers	45.00	80.00

Share your ideas in the next issue!!

Support Your Journal!

National Jump Rope for Heart

Suzie Crouch, National Director, Special Events Office

The National Joint Jump Rope for Heart Task Force met in Dallas in October for their semi-annual meeting. AAHPERD was represented by Pauline Jacobson and Bob Blackburn, chair and chair-elect of the JRFH Steering committee.

The agenda was packed with items requiring some joint decisions. Among those items was a review of all JRFH materials which go out to affiliates and coordinators. Very little updating of these materials was needed. Dick Brown of the American Heart Association office displayed several new items that could be considered for incentives. Among these were trading cards and comic books, developed with a heart healthy message. It was a different approach, but one which interested the committee enough to find out more.

The committee also discussed the need to add JRFH coordinators in states which had separate metro affiliates. This has to be done in order to eliminate competition within the state between the metro area and the rest of the state, and to strengthen communication across the state. It would also bring the AAHPERD organizatoins for JRFH in line with the American Heart Association organizations.

The need for a demonstration team workshop was discussed, and it was decided that AAPHERD's JRFH Steering committee would plan this workshop. Tentatively, the first demo-team workshop will be held in Summer 1993 at a yet to be determined site. Most expenses for this workshop will be borne by the participants with some expenses being underwritten by JRFH vendors.

Final figures for JRFH for 1991-1992 showed 1.5 million students participating in JRFH and raising $29.9 million dollars. This was a significant increase over last year.

While some states may have seen a large increase in the gross income this past year, their 5% share may not have increased in proportion. This may not have been due to increased expenses over last year. American Heart Association was required to add certain expenses they had not added previously because of their 501-3C status. These may have even salaries and benefits for some of the staff who worked with JRFH.

If you have any questions about this in your state, please call your state affiliate to discuss this. We have found in all instances we have investigated that the expenses were legitimate. The American Heart Association has worked hard with our leadership to assure that expenses for both organizations are handled fairly. Relationships between American Heart Association and AAHPERD are better than they have ever been, due mostly to the efforts of the two organizations' leadership groups. We all have to do our share, however, in maintaining these relationships across the nation. Please let us know if problems do occur before they become monumental.

STATE BOARD OF PUBLIC EDUCATION

33 S. Last Chance Gulch

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PHYSICAL BEST — Fit or Failure?

Suzie Crouch, National Director, Special Events Office

Are we setting our students up to be failures or are we changing their attitudes about physical fitness? That question arose at a recent school district inservice meeting. The topic I was to present was the PHYSICAL BEST and how to implement it in the existing curriculum. The discussion made was the proposed merger of the President's council and PHYSICAL BEST programs.

During the discussion, AAHPERD and the President's Council were accused of "lowering our standards" and "sending the wrong message to our students." The next few minutes put me on the defensive, and really made me think about what we are attempting to do. I found that every once in a while, it is nice to be challenged, just so you are forced to take an objective look at your product.

While I attacked an old coaching mentality (many of us are old coaches) these few people were exhibiting, I recommended to them that there is no place in fitness for competition, except for competition with one's self. The only way to change a negative attitude was through positive reinforcement. If we were only awarding those who achieved above the 85th percentile, how many were we calling failures because they did not achieve a high degree of fitness? What were we saying to these children and how were they perceiving themselves? If 15% achieved the standard, then 85% must have failed.

I went on to tell the group that I would rather have 100 students all at the criterion health-related standard, rather than 15 students with excellent fitness levels, and 85 barely breathing. But, if I were a volleyball coach, of course, I would rather have the 15 best volleyball players in the school. I think this analogy finally made them realize the difference between fitness and athletics. Whether they understand fitness remains to be seen.

I demonstrated to the coaches the curve for scores we might expect to see by only rewarding student who achieved the 85th percentile or above. It would probably be skewed on the high end with few numbers and the majority have a huge hump at the low end without much in the middle. What we would really like to see is a huge hump right at the criterion health-related standard position, and skews on both the high and low end. We are trying to develop a healthy young generation not Olympic decathletes. The smiles and nods from the majority of teachers in the crowd let me know the point was made. You could almost see the light go on in a few heads.

The PHYSICAL BEST educational and assessment fitness program is designed to give positive reinforcement. By setting moderate and attainable goals, and by rewarding regular fitness activities, the children will start seeing fitness as something that is attainable, and something to continue trying to achieve. Through the educational program of PHYSICAL BEST, students are also learning the cognitive part of fitness...why be fit, how to get fit, and how to stay fit.

Another point to consider, which is having a bearing on the future of physical education, is the fact that the 85% of failures from the last generation, our students' parents, are the ones with their hands on the purse strings. They are the same people who didn't like physical education because of the negative reinforcement they received. And, they sure think about those frustrating times they had in school, when we ask them to pay a little higher tax to finance our school programs.

Yes, maybe our standards are a bit lower than a generation ago, but the belief is there will be a much greater percentage of fit children because of these standards and the educational fitness programs available today, like PHYSICAL BEST.

They are today's school board members, superintendents, principals, community leaders and citizens.

Help your state association! Become a member of AAHPERD today!

Enjoy AAHPERD benefits.

Become an AAHPERD member. Complete the membership application and mail it to the address provided.

Membership Benefits Include:

Membership Options
Choices are offered to reflect your status in the profession and your choice of periodicals. New members may elect membership in one or two associations of AAHPERD, as listed below:

American Association for Leisure and Recreation (AALR): Promotes school, community and national programs of leisure services and recreation education.

National Association for Sport and Physical Education (NASPE): Provides national leadership and influences physical education and sports policies in programs for teachers, coaches, athletic administrators, athletic trainers, intramural directors and scholars at all educational levels.

National Association for Girls and Women in Sport (NAGWS): Fosters quality and equality in sports for girls and women. Serves those who teach, coach, train and administer all sports (including club sports and intramurals) at elementary, secondary and college levels.

Association for the Advancement of Health Education (AAHE): Preserves and improves health through education. Promotes both the process of health education and specific health education programs.

Association for Research, Administration, Professional Councils, and Societies (ARAPCS): Coordinates activities of the following special interest groups:
- *Adapted Physical Activities*
- *City & County Directors • Measurement and Evaluation • Aging and Adult Development • Ethnic Minorities • Outdoor Education • Aquatics • Facilities and Equipment • Physical Fitness • College & University Administrators • International Relations • Safety • Student Action*

National Dance Association (NDA) Promotes sound policies for dance education, through conferences, conventions, special projects, publication and cooperation with other dance and performing arts groups.

Outstanding Periodicals
In addition to Update, AAHPERD's newsletter, an automatic benefit of membership, members may elect to receive:
- *JOPERD – The Journal of Physical Education, Recreation & Dance (9 issues/year)*
- *Health Education (6 issues/year)*
- *Research Quarterly for Exercise and Sport (4 issues/year)*
- *Strategies: A Journal for Physical and Sport Educators (available for a small additional charge).*

Conventions and Conferences
Annual National Conventions, where your colleagues from across the country gather. Also, AAHPERD sponsors six regional conventions (one for each AAHPERD national district), and state and local conferences.

Professional Publications
AAHPERD publishes some of the best current literature in your field, available at a 10 percent discount to members.

Professional Placement Service

Low-cost Insurance and Financial Programs

6/91

AAHPERD Membership Application

American Alliance for Health, Physical Education, Recreation and Dance
1900 Association Drive • Reston, VA 22091 • (703) 476-3400

Yes, I want to join AAHPERD.

Name (Mr.) (Ms.) _____

Address _____

City _____ State _____ Zip _____

Telephone: Home ( ) _____ Office ( ) _____

I select membership in the following association(s) of AAHPERD. (Circle two numbers, indicating your first and second choices. You may select one association twice. Each association that you select receives a portion of your dues.)

1 2 American Association for Leisure and Recreation (AALR)
1 2 National Dance Association (NDA)
1 2 Association for the Advancement of Health Education (AAHE)
1 2 Association for Research, Administration, Professional Councils and Societies (ARAPCS)
1 2 National Association for Girls and Women in Sport (NAGWS)
1 2 National Association for Sport and Physical Education (NASPE)
Z Research Consortium - for those interested in research.
(A check here does not affect your Association affiliation)

In addition to UPDATE, AAHPERD's monthly newsletter (an automatic benefit of membership), I wish to receive the following periodicals:
☑ *Update* (An automatic benefit of membership)
☐ *Journal of Physical Education, Recreation and Dance*
☐ *Journal of Health Education*
☐ *Research Quarterly for Exercise and Sport*
☐ In addition I wish to receive *Strategies: A Journal for Physical and Sport Educators* (Add $10.00/year to your membership dues. Foreign members add $15.00/year)

Four dollars of your dues are allocated to Update, and twenty dollars per each selected periodical.

I select the following membership option, based on my professional status and my choice of periodicals:

☐ **Professional**

	One-year membership	Two-year membership	Three-year membership
Update Plus:			
Any one periodical*	☐ $85.00	☐ $150.00	☐ $200.00
Any two periodicals*	☐ $105.00	☐ $190.00	☐ $260.00
Any three periodicals*	☐ $125.00	☐ $230.00	☐ $320.00

☐ **Student** (Student rates apply only to full-time students.)

	Graduate	Undergraduate
Update Plus:		
Any one periodical*	☐ $30.00	☐ $28.00
Any two periodicals*	☐ $50.00	☐ $48.00
Any three periodicals*	☐ $70.00	☐ $68.00

☐ **Life Membership** - $1500 - available in 3 payments

*Add $5.00/year for each periodical mailed outside the U.S. or Canada.
All payments must be in U.S. dollars. Check must be drawn on a U.S. bank. Unesco coupons not accepted.

I am remitting my dues
☐ by enclosed check, payable to AAHPERD
☐ by VISA (13 or 16 numbers)
☐ by MASTERCARD (16 numbers)
Card # _____ Expiration Date _____
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(Please read and write numbers carefully)

Signature _____

Please indicate amount paid
$ _____

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Return this form with payment to:

AAHPERD, P.O. Box 10406, Fairfax, VA 22031-8006

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6/91

GUIDELINES
for Contributing Authors
to the
Montana Journal of Health, Physical Education, Recreation and Dance

GUIDELINES FOR PREPARATION OF MANUSCRIPTS

The *Montana Journal* is published each Fall and Spring by the Montana Association of Health, Physical Education, Recreation and Dance. Manuscripts should be sent to: Daniel G. Graetzer, Editor *Montana Journal*, Department of Health & Human Performance, The University of Montana, Missoula, MT 59812. The title of the manuscript, the author name and affiliation, mailing address of primary author, and a brief biographical sketch of each author should appear on a cover title page. If possible, please include a computer disk (either IBM or macintosh) with the file saved on it with your submission.

MANUSCRIPT

Manuscripts must be typed on $8\frac{1}{2}$" by 11" white 25% bond paper and submitted in triplicate. Authors should adhere to the guidelines provided in the *Publication Manual of the American Psychological Association, 3rd Ed.*, (APA). Copies of this manual are found in most college and university libraries. Recommended length for manuscripts is 5-8 typed pages. However, one- or two-page manuscripts about such things as teaching or coaching points would be very appropriate, especially if a diagram or drawing were included. Manuscripts must be double-spaced including all block quotations, field notes, references, and tables. Tables, figures, and graphs must be clearly labeled and included on separate pages.

Deadline Dates for Submitting Material to the Journal

News/Dates/Announcements/Manuscripts

Fall/Winter Issue	October 15
Spring/Summer Issue	February 15

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